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36. (Cancelled)

37. (Currently amended) ~~The transgenic plant cell of Claim 36~~ A transgenic plant cell transformed with a nucleic acid encoding a polypeptide, wherein the STSRP is a PLC-2 protein as polypeptide is defined in SEQ ID NO:12.

38. (Currently amended) The transgenic plant cell of Claim 36 ~~37~~, wherein the STSRP ~~coding~~ nucleic acid comprises a the polynucleotide as defined in SEQ ID NO:7.

39. (Currently amended) A transgenic plant cell transformed ~~by Signal Transduction Stress-Related Protein (STSRP) coding~~ with a nucleic acid encoding a polypeptide, wherein ~~the STSRP coding~~ expression of the polypeptide in the plant cell results in the plant cell's increased tolerance to an environmental stress selected from one or more of the group consisting of drought and temperature less than or equal to 0°C, as compared to an untransformed wild type variety of the plant cell; wherein the nucleic acid hybridizes under stringent conditions to at least one sequence selected from the group consisting of the sequence of SEQ ID NO:7 and the full-length complement of the sequence of SEQ ID NO:7; and wherein the stringent conditions comprise hybridization in a 6X sodium chloride/sodium citrate (SSC) solution at 65°C and at least one wash in a 0.2X ~~sodium chloride/sodium citrate (SSC)~~, 0.1% SDS solution at 50°C.

40. (Cancelled)

41. (Currently amended) A transgenic plant cell transformed ~~by a STSRP coding~~ with a nucleic acid encoding a polypeptide, ~~wherein the STSRP coding nucleic acid comprises a polynucleotide encoding a polypeptide~~ having at least 80% 90% sequence identity with a polypeptide as defined in SEQ ID NO:12, wherein expression of the polypeptide in the plant cell results in the plant cell's increased tolerance to an environmental stress selected from one or more of the group consisting of drought and temperature less than or equal to 0°C, as compared to an untransformed wild type variety of the plant cell.

42. (Currently amended) The transgenic plant cell of any one of Claims 36, 37, 38, 39, or 41, wherein the plant is a monocot.

43. (Currently amended) The transgenic plant cell of any one of Claims 36, 37, 38, 39, or 41, wherein the plant is a dicot.

44. (Currently amended) The transgenic plant cell of any one of Claims 36, 37, 38, 39, or 41, wherein the plant is selected from the group consisting of maize, wheat, rye, oat, triticale, rice, barley, soybean, peanut, cotton, rapeseed, canola, manihot, pepper, sunflower, tagetes, solanaceous plants, potato, tobacco, eggplant, tomato, Vicia species, pea, alfalfa, coffee, cacao, tea, Salix species, oil palm, coconut, and perennial grass, and a forage crop.

45. (Currently amended) A transgenic plant comprising a the plant cell according to any one of Claims 36, 37, 38, 39, or 41.

46. (Currently amended) A seed produced by a transgenic plant comprising a the plant cell according to any one of Claims 36, 37, 38, 39, or 41, wherein the seed comprises the ~~STSRP~~ nucleic acid encoding the polypeptide, wherein the seed is true breeding for an increased tolerance to an environmental stress as compared to a an untransformed wild type variety of the plant cell, and wherein the environmental stress is selected from one or more of the group consisting of drought and low temperature less than or equal to 0°C.

47. (Currently amended) An isolated ~~Signal Transduction Stress Related Protein (STSRP)~~ ~~coding~~ nucleic acid encoding a polypeptide, wherein the ~~STSRP-coding~~ nucleic acid comprises a polynucleotide that encodes a the polypeptide as defined in SEQ ID NO:12.

48. (Currently amended) The isolated ~~STSRP-coding~~ nucleic acid of Claim 47, wherein the ~~STSRP-coding~~ nucleic acid comprises a the polynucleotide as defined in SEQ ID NO:7.

49. (Currently amended) An isolated ~~STSRP-coding~~ nucleic acid; encoding a polypeptide, wherein expression of the polypeptide in the plant cell results in the plant cell's increased

tolerance to an environmental stress selected from one or more of the group consisting of drought and temperature less than or equal to 0°C, as compared to an untransformed wild type variety of the plant cell; wherein the STSRP coding nucleic acid hybridizes under stringent conditions to at least one sequence selected from the group consisting of the sequence of SEQ ID NO:7 and the full-length complement of the sequence of SEQ ID NO:7; and wherein the stringent conditions comprise hybridization in a 6X sodium chloride/sodium citrate (SSC) solution at 65°C and at least one wash in a 0.2X sodium chloride/sodium citrate (SSC), 0.1% SDS solution at 50°C.

50. (Cancelled)

51. (Currently amended) An isolated ~~STSRP coding~~ nucleic acid, ~~wherein the STSRP coding nucleic acid comprises a polynucleotide~~ encoding a polypeptide having at least 80% 90% sequence identity with a the polypeptide as defined in SEQ ID NO:12, wherein expression of the polypeptide in the plant cell results in the plant cell's increased tolerance to an environmental stress selected from one or more of the group consisting of drought and temperature less than or equal to 0°C, as compared to an untransformed wild type variety of the plant cell.

52. (Currently amended) An isolated recombinant expression vector comprising ~~an STSRP coding~~ the nucleic acid of any one of Claims 47, 48, 49, or 51, wherein expression of the STSRP polypeptide in a plant cell results in the plant cell's increased tolerance to an environmental stress, as compared to a an untransformed wild type variety of the plant cell, and wherein the environmental stress is selected from one or more of the group consisting of drought and ~~low~~ temperature less than or equal to 0°C.

53. (Cancelled)

54. (Currently amended) ~~The method of Claim 53, A method of producing a transgenic plant comprising a nucleic acid encoding a polypeptide, comprising,~~  
a. transforming a plant cell with the expression vector of Claim 52; and  
b. generating from the plant cell a transgenic plant that expresses the polypeptide;  
wherein the ~~STSRP is a PLC-2 polypeptide as~~ polypeptide is defined in SEQ ID NO:12.

55. (Currently amended) The method of Claim ~~53~~ 54, wherein the ~~STSRP-coding nucleic acid expression vector~~ comprises a the polynucleotide as defined in SEQ ID NO:7.

56. (Currently amended) A method of producing a transgenic plant ~~containing a Signal Transduction Stress Related Protein (STSRP)-coding~~ comprising a nucleic acid encoding a polypeptide, wherein expression of the STSRP polypeptide in the plant results in the plant's increased tolerance to an environmental stress, as compared to a an untransformed wild type variety of the plant, comprising,

- a. transforming a plant cell with ~~an~~ the expression vector ~~comprising the nucleic acid of Claim 52;~~ and
- b. generating from the plant cell a transgenic plant ~~with an increased tolerance to an environmental stress as compared to a wild type variety of the plant that~~ expresses the polypeptide;

wherein the ~~STSRP-coding~~ nucleic acid hybridizes under stringent conditions to at least one sequence selected from the group consisting of the sequence of SEQ ID NO:7 and the full-length complement of the sequence of SEQ ID NO:7; wherein the stringent conditions comprise hybridization in a 6X sodium chloride/sodium citrate (SSC) solution at 65°C and at least one wash in a 0.2X sodium chloride/sodium citrate (SSC), 0.1% SDS solution at 50°C; and wherein the environmental stress is selected from one or more of the group consisting of drought and ~~low~~ temperature less than or equal to 0°C.

57. (Cancelled)

58. (Currently amended) A method of producing a transgenic plant ~~containing a Signal Transduction Stress Related Protein (STSRP)-coding~~ comprising a nucleic acid encoding a polypeptide, wherein expression of the STSRP polypeptide in the plant results in the plant's increased tolerance to an environmental stress, as compared to a an untransformed wild type variety of the plant, comprising,

- a. transforming a plant cell with ~~an~~ the expression vector ~~comprising the nucleic acid of Claim 52;~~ and

b. generating from the plant cell a transgenic plant ~~with an increased tolerance to an environmental stress as compared to a wild-type variety of the plant, that~~ expresses the polypeptide;

wherein the ~~STSRP coding nucleic acid comprises a polynucleotide encoding a polypeptide~~ having ~~has~~ at least 80% 90% sequence identity with a the polypeptide as defined in SEQ ID NO:12, and wherein the environmental stress is selected from one or more of the group consisting of drought and ~~low~~ temperature less than or equal to 0°C.